

Notice of Allowability

Application No.

10/699,150

Applicant(s)

GIBSON, GARY

Examiner

Thomas D. Alunkal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment After Final filed 3/28/07.
2. ☒ The allowed claim(s) is/are 1 and 3-40.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

Allowable Subject Matter

Claims 1 and 3-40 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding independent claim 1, none of the references of record alone or in combination suggest or fairly teach a data storage device for use with a beam transmitter configured to transmit a beam, comprising: a luminescent layer comprising a luminescent material capable of emitting light while being bombarded by the beam from the beam transmitter; a detector located near the luminescent layer for detecting the light emitted from the luminescent layer; and a phase-change layer located between the luminescent layer and the detector, said phase-change layer able to transform from a first phase to a second phase; wherein light emitted from the luminescent layer and received by the detector materially differs when the phase-change layer transforms from the first phase to the second phase **wherein the first phase of the phase-change layer enables transmission of materially more light through the phase-change layer from the luminescent layer to the detector than the second phase of the phase-change layer.**

Regarding independent claim 13, none of the references of record alone or in combination suggest or fairly teach a data storage device for use with a beam transmitter configured to transmit a beam, comprising: a luminescent layer

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comprising a luminescent material capable of emitting light while being bombarded by the beam from the beam transmitter; a phase-change layer located between the luminescent layer and the beam transmitter, said phase-change layer able to transform from a first phase to a second phase; and a detector located proximate the luminescent layer for detecting the light emitted from the luminescent layer; **wherein light emitted from the luminescent layer and received by the detector materially differs when the phase-change layer transforms opacity from the first phase to the second phase.**

Regarding independent claim 19, none of the references of record alone or in combination suggest or fairly teach a device for use with a beam transmitter configured to transmit a beam, comprising: a luminescent layer comprising a luminescent material capable of emitting light while being bombarded by the beam from the beam transmitter; a detector located near the luminescent layer and the beam transmitter for detecting the light emitted from the luminescent layer; and **a phase-change layer located adjacent the luminescent layer such that the luminescent layer is positioned between the detector and the phase-change layer, said phase-change layer able to transform from a first phase to a second phase; wherein light emitted from the luminescent layer and received by the detector materially differs when the phase-change layer transforms from the first phase to the second phase.**

Regarding independent claim 40, none of the references of record alone or in combination suggest or fairly teach a method for storing data on a data storage device comprising a phase change layer and a luminescent layer, the

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method comprising: bombarding the luminescent layer with a beam, causing the luminescent layer to emit light; detecting the light emitted from the luminescent layer using a detector; and writing data by transforming the phase change layer from a first phase to a second phase; **wherein light emitted from the luminescent layer and detected by the detector materially differs when the phase-change layer transforms from the first phase to the second phase.**

Claims 3-12, 14-18, and 20-39 are allowed with their respective parent claims.

Conclusions

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure: Terao et al. (US PgPub 2003/0218941) disclose a data storage device, comprising: a phase change layer (Paragraph 22), a luminescent layer (Paragraph 129) and a detector (Figure 9, Element 8-3). Gemma et al. (US 6,125,095) disclose a data storage device, comprising: a laser source (Figure 7, Element 32), a luminescent layer (Figure 2), a detector (Figure 7, Element 35) and a phase change layer (Column 9, lines 62-66). Comberg et al. (US 4,982,362) discloses a data storage device, comprising: an electron beam (Figure 1, Element 1), a luminescent layer (Column 3, lines 44-54) and a detector (Figure 1, Element 9).

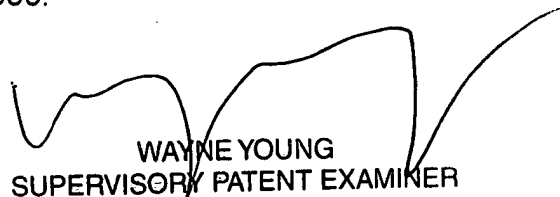
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Alunkal whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas Alunkal



WAYNE YOUNG
SUPERVISORY PATENT EXAMINER